

ON THE OWSTONIIDÆ OF JAPAN

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FOUR FIGURES

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In the past several years I have collected specimens of the family Owstoniidæ at Mimase, near Kôchi, Prov. Tosa and at other fish markets. They are chiefly secured with dredge from deep waters, more than 80 fathoms deep. Since they are not common, they have little market value as food fishes. Three known species of fishes belonging to this family are as follows: *Owstonia weberi* (Gilchrist), from Natal, South Africa, *Owstonia totomiensis* Tanaka, from Tôtômi, Japan, and *Owstonia tosaensis* Kamohara, from Tosa, Japan. In the present paper I shall redescribe the lateral line and other characters of the last two Japanese species, in addition to the description of one new genus and two new species.

Before proceeding further, I wish to express my sincere thanks to Dr. Shigeo Tanaka of Tokyo Imperial University, for his kind advice and constant guidance.

CHARACTERS COMMON TO ALL THE JAPANESE SPECIES OF OWSTONIIDÆ

Body elongate, compressed. A single dorsal with three weak spines; anal with one weak spine; ventral with one spine and five rays. Head moderate in size; eye large; snout short; interorbital slightly convex or flattish across. Nostrils two, close together, directly in front of eye, posterior one a little larger. Mouth directed obliquely upward; maxilla exposed, without supplemental bone; premaxillary with a depression at the extremity. Jaws with a single row of canine teeth, placed at rather wide intervals, anterior part of lower jaw armed with two rows of teeth; no teeth on premaxillary symphysis. Angle

and lower margin of preopercle serrated. Pseudobranchiae well developed; gill membranes separate, free from the isthmus; branchiostegals 6 in number. Body regularly covered with cycloid scales, those on breast smaller than those on side of body, dorsal and anal fins not scaly, caudal scaly at base. Dorsal high, slender, originating above scapular angle of opercle. Pectoral moderate, free margin rounded; ventrals approaching each other beneath bases of pectorals; caudal elongate, lanceolate. Lateral line running along base of dorsal fin, ceasing beneath the last ray of the fin, not united with the fellow of the other side. Skin connecting premaxillary with maxillary blackish. Judging from the presence of matured eggs the spawning season probably is winter.

KEY TO THE GENERA AND SPECIES OF OWSTONIIDAE OF JAPAN

- a. Body moderately elongated; scales moderate in size; interorbital slightly convex across *Owstonia*
- b. Cheek not scaly. Lateral line united with the fellow of the other side in front of origin of dorsal *totomiensis*
- bb. Cheek scaly
 - c. Lateral line rising from upper corner of gill opening, not united with the fellow of the other side in front of origin of dorsal *japonica*, n. sp.
 - cc. Lateral line not connected with that of the other side in front of origin of dorsal. Another one rises from upper corner of gill opening, united with the upper lateral line at the base of second spine of dorsal *tosaensis*
- aa. Body much elongated; scales larger; interorbital flattish... ..
 *Pseudocepola taeniosoma*, n. g., n. sp.

I. *Owstonia totomiensis* Tanaka (fig. 1)

Radial formula: D. III, 21; A. I, 14; P. 21; V. I, 5; C. 17

Head 3.4 in length without caudal; depth 3; eye 2.6 in head; interorbital 5.2; snout 6.3; depth of caudal peduncle 2.6. Scales in a longitudinal series to base of caudal about 55. Scales on body cycloid, regularly arranged, cheek not scaly, opercles scantily scaled. Angle and lower margin of preopercle serrated, the serration becoming finer toward the angle. Branchiostegals 6 in number. Ends of posterior rays of dorsal and anal reaching base of caudal. Lateral line near

margin of back, united with the fellow of the other side in front of origin of dorsal. Another one rises from upper corner of gill opening upward and backward, abruptly vanishing on the fourth scale of the dorsal, not being united with the upper lateral line. Color in life uniformly reddish, fading out after preservation in formalin. The membrane of dorsal, between second spine and second ray, has three brownish irregularly formed patches, arranged obliquely, the anterior one highest, touching the edge of the membrane, the posterior one lowest, being almost in contact with the base of dorsal. Another specimen 140 mm long with caudal has also three broader blackish patches nearly in the same places, but a specimen 440 mm long with caudal has no patches.

Described and figured from a specimen 294 mm long with caudal, obtained at Mimase.

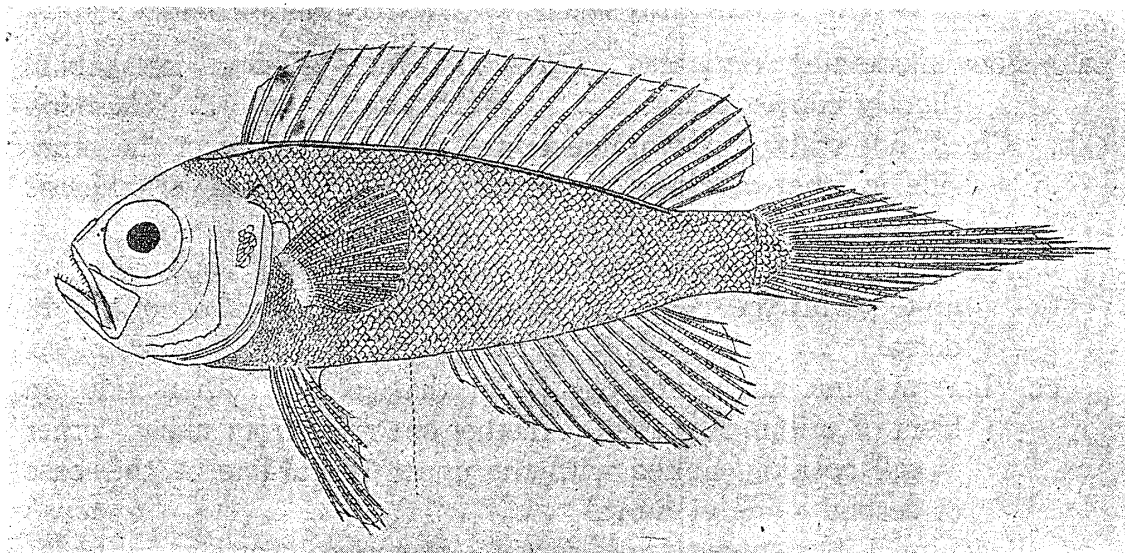


Fig. 1. *Owstonia totomiensis* Tanaka. $\times 0.4$.

Measurements of *Owstonia totomiensis*

| | Specimen | | |
|--------------------------------------|----------|--------|--------|
| | A | B | C |
| Total length with caudal | 440 mm | 294 mm | 140 mm |
| Total length exclusive of caudal ... | 290 " | 192 " | 100 " |
| Depth of body | 86 " | 65 " | 32 " |
| Length of head | 83 " | 57 " | 30 " |
| Length of snout | 18 " | 9 " | 5 " |
| Depth of caudal peduncle | 31 " | 22 " | 11 " |
| Horizontal diameter of orbit | 28 " | 22 " | 12 " |

| | | | |
|--------------------------------------|---------|---------|---------|
| Interorbital width | 16 mm | 11 mm | 5 mm |
| Number of dorsal spines and rays ... | III, 21 | III, 21 | III, 20 |
| Number of anal spine and rays ... | I, 14 | I, 14 | I, 13 |

2. *Owstonia japonica*, n. sp. (fig. 2)

Radial formula: D. III, 21; A. I, 14; P. 21; V. I, 5; C. 17

Head 3.8 in length without caudal; depth 3.6; eye 2.4 in head; interorbital 5.7; snout 6.7; depth of caudal peduncle 2.9; third dorsal (longest) spine 1.8; posterior (longest) rays 1.1; posterior anal (longest) rays 1.2; spine of ventral 2; first ray 1; upper pectoral (longest) rays 1.6. Scales in a longitudinal series to base of caudal about 57. Body elongate, compressed, highest at the ventral origin. Head moderate in size; eye large, high, lateral; interorbital slightly convex across; snout very short, its length equal to about one-third the eye diameter. Mouth directed obliquely upward; premaxillary with a depression at the extremity. Jaws armed with one row of canine teeth, placed at rather wide intervals, anterior part of lower jaw armed with two rows of teeth, lacking at premaxillary symphysis; no teeth on vomer or palatines. Posterior part of maxillary broad, not reaching beneath posterior rim of eye. Angle and lower margin of preopercle with six spines at irregular intervals. Pseudobranchiæ well developed; gill membranes separate, free from the isthmus; branchiostegals 6 in number. Dorsal originating above scapular angle of opercle; anal originating in vertical from ninth ray of dorsal. The dorsal and anal rays gradually increase in length backward, ends of posterior rays of both

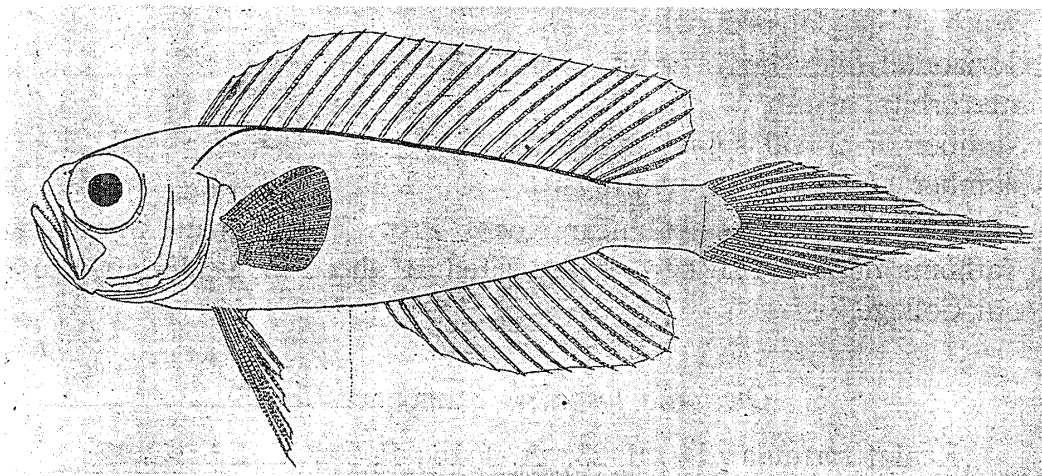


Fig. 2. *Owstonia japonica*, n. sp. $\times 0.5$.

fins reaching base of caudal when folded down. Pectoral moderate, not reaching vertical from vent which is directly in front of anal. Ventrals approaching each other beneath bases of pectorals, reaching first ray of anal. Caudal elongate, lanceolate. Scales moderate, cycloid, arranged regularly, deciduous, those on breast considerably smaller than those on side of body. Cheek and opercle closely scaled, somewhat irregularly, dorsal and anal fins not scaly, caudal scaly at base. Lateral line rises from upper corner of gill opening upward and backward toward the base of first ray of dorsal, hence runs along whole base of the fin, ceasing beneath the last ray, not being united with the fellow of the other side. Color in life uniformly reddish. Vertical fins finely adorned with many small white vermiculate markings, the margin being whitish. These colors fade out after preservation in formalin. Skin connecting premaxillary with maxillary blackish.

This species is allied to *Owstonia totomiensis* Tanaka, but differs from the latter in having cheek closely scaled and lateral line rising from upper corner of gill opening, not being united with the fellow of the other side in front of origin of dorsal.

Measurements of *Owstonia japonica*

| | Specimen | | |
|--------------------------------------|----------|---------|---------|
| | A | B | C |
| Total length with caudal | 225 mm | 182 mm | 145 mm |
| Total length exclusive of caudal ... | 150 " | 117 " | 92 " |
| Depth of body | 42 " | 32 " | 25 " |
| Length of head | 40 " | 31 " | 25 " |
| Length of snout | 6 " | 5 " | 4 " |
| Depth of caudal peduncle | 14 " | 12 " | 9 " |
| Horizontal diameter of orbit | 17 " | 13 " | 11 " |
| Interorbital width | 7 " | 5 " | 3 " |
| Number of dorsal spines and rays ... | III, 21 | III, 21 | III, 21 |
| Number of anal spine and rays... .. | I, 14 | I, 14 | I, 14 |

Locality:—Off Mimase, near Kôchi, Prov. Tosa, Japan, more than 80 fathoms deep. The type is deposited at the Biological Laboratory, Kôchi College.

3. *Owstonia tosaensis* Kamohara (fig. 3)

Radial formula: D. III, 23; A. I, 16; P. 20; V. I, 5; C. 17

Head 4.5 in length without caudal; depth 4; eye 3.2 in head;

interorbital 4.1; snout 6.5; depth of caudal peduncle 2.4. Scales in a longitudinal series to base of caudal about 60. Cheeks with six rows of scales, five rows on opercles. No teeth on vomer or palatines. Middle rays of caudal very long, filamentous. Branchiostegals 6 in number. Lateral line near margin of back, reaching above posterior rim of eye, not united with the fellow of the other side. Another one rises from upper corner of gill opening, being united with the upper lateral line at the base of second spine of dorsal. Color in life reddish, pale below. Anal yellowish, with two longitudinal red bands. Dorsal yellowish, with a longitudinal red band along the base. Upper half of caudal reddish, lower half yellowish. Pectoral reddish; ventral pale. These colors fade out after preservation in formalin.

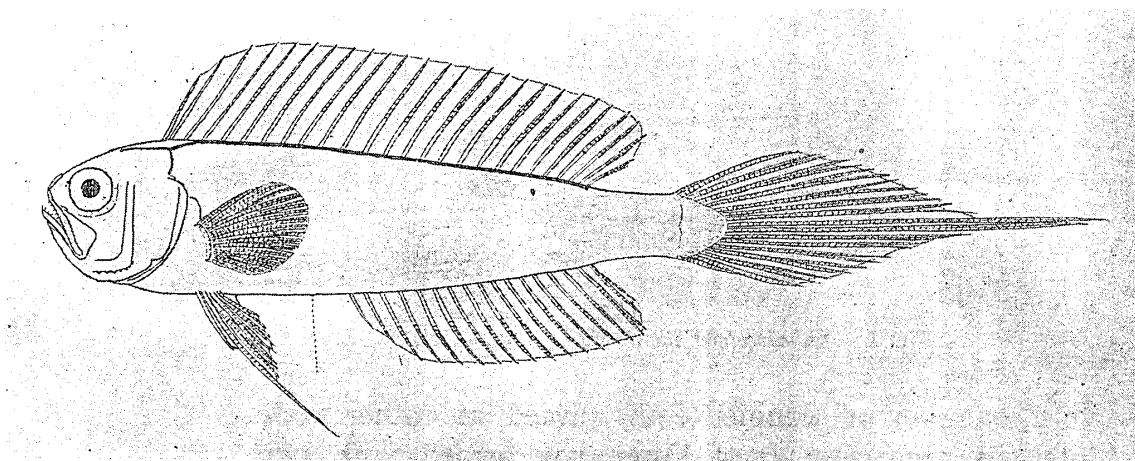


Fig. 3. *Owstonia tosaensis* Kamohara. $\times 0.3$.

Described and figured from a specimen 350 mm long as measured to tip of caudal exclusive of its filaments, collected at Mimase.

Pseudocepola, n. g.

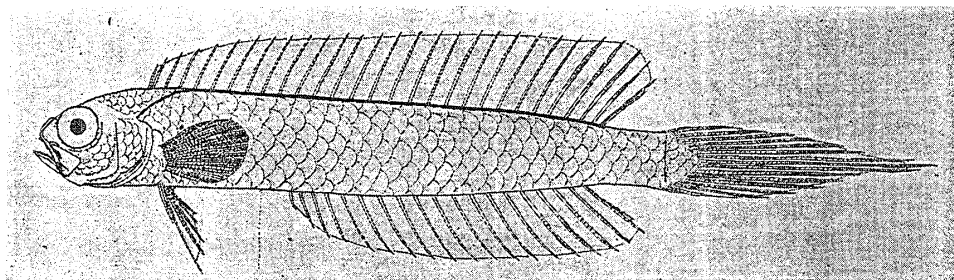
The genus here established is distinguished from *Owstonia* by the body much elongated, large scales with bluntly serrated hinder margins and flattish interorbital. Moreover the genus is allied to *Sphenanthias* Weber 1913, but differs from the latter in having 3 (instead of 9) dorsal spines, scales not truly ctenoid and serrated preopercles. *Sphenanthias* remains doubtful in the taxonomic position and in 1931 Weber and Beaufort expressed their opinion that it may find a place in Anthiinæ of Serranidæ, but *Sphenanthias*, as *Pseudocepola*, rather seems to me to belong to the Owstoniidæ.

(Type: *Pseudocepola taeniosoma*, n. sp.)

4. *Pseudocepola taeniosoma*, n. sp. (fig. 4)

Radial formula: D. III, 26; A. I, 18; P. 17; V. I, 5; C. 17

Head 5.6 in length without caudal; depth 6.4; eye 2.8 in head; interorbital 6.2; snout 8.3; depth of caudal peduncle 2.1; third dorsal (longest) spine 2.8; posterior (longest) rays 1.1; posterior anal (longest) rays 1.2; spine of ventral 2.5; first (longest) ray 1.1; upper pectoral (longest) rays 1.3. Scales in a longitudinal series to base of caudal about 30. Body much elongated, compressed. Head moderate in size; eye large, high, lateral; interorbital rather narrow, flattish, its width equal to about one-sixth the length of head. Mouth directed obliquely upward; premaxillary with a depression at the extremity. Jaws armed

Fig. 4. *Pseudocepola taeniosoma*, n. g., n. sp. $\times 0.5$.

with one row of canine teeth, placed at rather wide intervals, anterior part of lower jaw armed with two rows of teeth, lacking at premaxillary symphysis. No teeth on vomer or palatines. Posterior part of maxillary broad, its width equal to five-ninths the eye diameter, not reaching beneath posterior rim of eye. Angle and lower margin of preopercle coarsely serrated, but finely serrated in another specimen 220 mm long with caudal. Pseudobranchiæ well developed; gill membranes separate, free from the isthmus; branchiostegals 6 in number. Dorsal originating above scapular angle of opercle. Anal originating in vertical from eighth ray of dorsal. The dorsal and anal rays gradually increase in length backward, ends of posterior rays of both fins reaching base of caudal when folded down. Their spines are so weak that in some other specimens they cannot be easily distinguished from the rays. Pectoral moderate, free margin rounded, tip before vent which is directly in front of anal. Ventrals approaching each other beneath bases of pectorals, scarcely reaching vent. Caudal elongate, lanceolate. Scales large, their hinder

 $\times 1$

margins bluntly serrated, not truly ctenoid, arranged regularly, somewhat deciduous, those on breast smaller than those on side of body, cheeks with four rows of scales, three rows on opercles, dorsal and anal fins not scaly, caudal scaly at base. Lateral line rises from upper corner of gill opening upward and backward toward the base of first ray of dorsal, hence runs along whole base of the fin, ceasing beneath the last ray, not united with the fellow of the other side. Color in life light reddish, pale below. Body adorned with red irregularly reticulated markings about of the size of scales. Dorsal and anal light reddish, with a broad longitudinal yellow band running along the middle of each fin, whitish in margin, anterior part of anal whitish. Pectoral light reddish, ventral pale. Caudal yellowish and bordered with whitish. These colors altogether fade out on preservation in formalin. Skin connecting premaxillary with maxillary blackish.

Measurements of *Pseudocepola taeniosoma*

| | Specimen | | |
|--------------------------------------|----------|---------|---------|
| | A | B | C |
| Total length with caudal | 215 mm | 203 mm | 130 mm |
| Total length exclusive of caudal ... | 170 " | 140 " | 95 " |
| Depth of body | 24 " | 22 " | 17 " |
| Length of head | 29 " | 25 " | 19 " |
| Length of snout | 4 " | 3 " | 2 " |
| Depth of caudal peduncle | 12 " | 12 " | 9 " |
| Horizontal diameter of orbit | 9 " | 9 " | 7 " |
| Interorbital width | 5 " | 4 " | 3 " |
| Number of dorsal spines and rays ... | III, 26 | III, 26 | III, 26 |
| Number of anal spine and rays ... | I, 18 | I, 18 | I, 18 |

Locality:—Off Mimase, near Kôchi, Prov. Tosa, Japan, more than 80 fathoms deep. The type is deposited at the Biological Laboratory, Kôchi College.

LITERATURE

- Barnard, K. H. 1925-1927 A monograph of the marine fishes of South Africa. *Ann. S. Afr. Mus.*, vol. 21, pp. 492-493.
- Kamohara, T. 1934 Fishes in the vicinity of Kôchi-shi (in Japanese). *Dôbutsugaku Zasshi*, vol. 46, no. 549, pp. 301-303.
- Tanaka, S. 1908 Notes on some Japanese fishes, with descriptions of fourteen new species. *Jour. Coll. Sci. Imp. Univ. Tokyo*, vol. 23, art. 7, p. 47.
- 1911-1930 Figures and descriptions of the fishes of Japan, including Riukiu Islands, Bonin Islands, Formosa, Kurile Islands, Korea and southern Sakhalin, vol. 2, pp. 33-34.
- Weber, M. 1913 Die Fische der Siboga-Expedition. pp. 210-212.
- Weber, M. et Beaufort, L. F. de 1931 The fishes of the Indo-Australian Archipelago. vol. 6, pp. 114-116.

CORRECTION OF T. KOMAI'S PAPER "NOTES ON SEMPER'S
LARVÆ FOUND IN THE VICINITY OF SETO"¹

Certain accounts on *Trochanthina bicincta* n. g., n. sp. were found to be erroneous by subsequent examination of the sections of the specimen. The posterior invagination is nothing but the deeply invaginated posterior region of the cylindrical body. Therefore the ectoderm lining the invagination is the direct continuation of the epidermis of the body. The mesenteric filament is *not* interrupted in the part adjacent to the 'aboral pocket,' contrary to my diagram (fig. 5). The unusually deep invagination of the posterior region led me to this mistake. Thus, the new genus *Trochanthina* should be withdrawn. However, the characteristic vivid purplish-red coloration and the double ciliary bands of the specimen probably warrant the preservation of the species '*bicincta*' which is to be referred to the genus *Zoanthina*.

Taku Komai,
Oct. 1934.

¹ Annot. Zool. Japon., Vol. 14, No. 1, pp. 67-77.

ÜBER DIE BESTIMMUNG DER VON MIR BESCHRIEBENEN,
DOPPELSCHWÄNZIGEN HOLOTHURIE;
EINE BERICHTIGUNG

Die abnorme, mit zwei Afteröffnungen versehene Seewalze nannte ich *Holothuria (Bohadschia) argus* (Jaeger).¹

Bei weiteren genaueren Untersuchungen des Exemplars bin ich aber zu dem Schlusse gekommen, dass es richtiger mit *Holothuria (Actinopyga) miliaris* (Quoy et Gaimard) benannt worden sei. Damals war ich noch im unklaren, weil solche, für die *argus*-Art sehr charakteristische, augenähnliche Flecken auf der Haut keineswegs zu finden waren, welche einen getrockneten *argus*-Trepang öfters kennzeichnen. Dagegen war es überall schwarz gefärbt und die Oberfläche stark gerunzelt, ganz wie es einem bei dem *miliaris*-Trepang gewöhnlich begegnet.

Beim Bestimmen der getrockneten, als Handelsartikel präparierten Seewalze sind alle andere Kennzeichen ausser den Kalkkörperchen kaum zuverlässig; jene falsche Artbestimmung beruht auf meine frühere ungeeignete Methode der Untersuchung von nur wenigen Kalkkörperpräparaten.

Hiroshi Ohshima

¹ Ohshima, H. 1934 Eine Holothurie mit zwei Afteröffnungen. Annot. Zool. Japon., Vol. 14, No. 3, pp. 327-330.

'PARABONELLIA' (NOM. NOV.) MISAKIENSIS (IKEDA),
CORRECTION OF MY PAPER ON 'PSEUDOBONELLIA'¹

Mr. H. Sato of Tôhoku Imperial University kindly reminded me of the fact that the generic name *Pseudobonellia* had been preoccupied by T. H. Johnston and O. W. Tiegs' *biuterina* (Proc. Linn. Soc. N. S. Wales, vol. 44, 1919, pp. 213-230). Accordingly, for Ikeda's *misakiensis* it should be replaced by some other new name. I propose *Parabonellia*, and the worm should be called *Parabonellia misakiensis* (Ikeda).

Katsuzo Onoda

¹ K. Onoda, 1934 On *Pseudobonellia*, a new genus of the Bonellian Echiuroids. Annot. Zool. Japon., vol. 14, no. 4, pp. 413-423.